



Client Name: ZIA Engineering & Environmental
Contact: Brad Davis
Address: 755 S. Telshor Boulevard
Suite F-201
Las Cruces, NM 88011

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Lab Proj #: P0902257
Report Date: 03/05/09
Client Proj Name: HELSF TSA Groundwater
Client Proj #: HELSF TSA Groundwater

Laboratory Results

Total pages in data package: 8

Lab Sample #
P0902257-01

Client Sample ID
HTSA-0197-HVW-003
-0209

Microseeps test results meet all the requirements of the NELAC standards or provide reasons and/or justification if they do not.

Approved By: _____

Rachel Whitby

Date: _____

3/5/09

Project Manager: _____

Rachel Whitby

The analytical results reported here are reliable and usable to the precision expressed in this report. As required by some regulating authorities, a full discussion of the uncertainty in our analytical results can be obtained at our web site or through customer service. Unless otherwise specified, all results are reported on a wet weight basis.

*As a valued client we would appreciate your comments on our service.
Please call customer service at (412)826-5245 or email customerservice@microseeps.com.*

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Case Narrative: The total manganese analysis was performed by Pace Analytical Services. The percent recoveries for the MS/MSD analyses for ferric and ferrous iron were outside of control limits. The LCS and all other QC analyses were acceptable.



Data Qualifiers: J - estimated value, U - Non detect, R - Poor surrogate recovery, M - Recovery/RPD poor for MS/MSD, SAMP/DUP, B - detected in blank, S - field sample as received did not meet NELAC sample acceptance criteria, L - Subcontracted Lab used, N - NELAC certified analysis

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Sample Description	Matrix	Lab Sample #	Sampled Date/Time	Received				
HTSA-0197-HVW-003-0209	Water	P0902257-01	24 Feb. 09 11:16	25 Feb. 09 12:18				
Analyte(s)	Flag	Result	PQL	Units	Method #	Analysis Date	By	
WetChem								
N Divalent Manganese		1.2	1.0	mg/L	Mod.7199	2/25/09	15:52	md
N Ferric Iron	UM	< 1.0	1.0	mg/L	Mod.7199	2/25/09	15:52	md
N Ferrous Iron	UM	< 1.0	1.0	mg/L	Mod.7199	2/25/09	15:52	md
Metals								
Manganese	L	1.200	0.005	mg/L	6010B	3/2/09		pas
RiskAnalysis								
N Carbon dioxide		35.00	5.00	mg/L	AM20GAX	3/2/09		rw
N Methane		0.290	0.100	ug/L	AM20GAX	3/2/09		rw



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Prep Method: Mod. for Determination of Ferrous and Ferric
Analysis Method: Mod. for Determination of Ferrous and Ferric

M090226014-MB

	<u>Result</u>	<u>TrueSpikeConc.</u>	<u>RDL</u>	<u>%Recovery</u>	<u>Ctl Limits</u>
Ferrous Iron	< 1.0 mg/L		1.0		- NA
Ferric Iron	< 1.0 mg/L		1.0		- NA
Divalent Manganese	< 1.0 mg/L		1.0		- NA

M090226014-LCS

	<u>Result</u>	<u>TrueSpikeConc.</u>	<u>%Recovery</u>	<u>Ctl Limits</u>
Ferrous Iron	8.6 mg/L	10.00	86.00	80 - 120
Ferric Iron	9.5 mg/L	10.00	95.00	80 - 120
Divalent Manganese	10.0 mg/L	10.00	100.00	80 - 120

P0902257-01A-MS

	<u>Result</u>	<u>TrueSpikeConc.</u>	<u>%Recovery</u>	<u>Ctl Limits</u>
Ferrous Iron	2.9 mg/L	10.00	29.00	70 - 130
Ferric Iron	15.0 mg/L	10.00	150.00	70 - 130
Divalent Manganese	11.0 mg/L	10.00	98.00	70 - 130

P0902257-01A-MSD

	<u>Result</u>	<u>TrueSpikeConc.</u>	<u>%Recovery</u>	<u>Ctl Limits</u>	<u>RPD</u>	<u>RPD Ctl Limits</u>
Ferrous Iron	2.3 mg/L	10.00	23.00	70 - 130	23.08	0 - 20
Ferric Iron	15.0 mg/L	10.00	150.00	70 - 130	0.00	0 - 20
Divalent Manganese	11.0 mg/L	10.00	98.00	70 - 130	0.00	0 - 20

 Outlined Results indicate results outside of Control limits



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 Client Proj Name: HELSF TSA Groundwater
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Prep Method: In House Dissolved Gas Sample Preparation
Analysis Method: Light Hydrocarbons (C1-C4) in Water

M090302001-MB

	<u>Result</u>	<u>TrueSpikeConc.</u>	<u>RDL</u>	<u>%Recovery</u>	<u>Ctl Limits</u>
Methane	< 0.100 ug/L		0.100		- NA

M090302001-LCS

	<u>Result</u>	<u>TrueSpikeConc.</u>	<u>%Recovery</u>	<u>Ctl Limits</u>
Methane	830.000 ug/L	822.80	101.00	75 - 125

M090302001-LCSD

	<u>Result</u>	<u>TrueSpikeConc.</u>	<u>%Recovery</u>	<u>Ctl Limits</u>	<u>RPD</u>	<u>RPD Ctl Limits</u>
Methane	840.000 ug/L	822.80	102.00	75 - 125	1.20	0 - 20

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Prep Method: In House Dissolved Gas Sample Preparation
Analysis Method: Analysis of Dissolved Permanent Gases in Water

M090302002-MB

	<u>Result</u>	<u>TrueSpikeConc.</u>	<u>RDL</u>	<u>%Recovery</u>	<u>Ctl Limits</u>
Carbon dioxide	< 5.00 mg/L		5.00		- NA

M090302002-LCS

	<u>Result</u>	<u>TrueSpikeConc.</u>	<u>%Recovery</u>	<u>Ctl Limits</u>
Carbon dioxide	120.00 mg/L	129.30	93.00	75 - 125

M090302002-LCSD

	<u>Result</u>	<u>TrueSpikeConc.</u>	<u>%Recovery</u>	<u>Ctl Limits</u>	<u>RPD</u>	<u>RPD Ctl Limits</u>
Carbon dioxide	120.00 mg/L	129.30	93.00	75 - 125	0.00	0 - 20

☐ Outlined Results indicate results outside of Control limits



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Prep Method: Acid Digestions of Aqueous samples and extracts for tc
Analysis Method: Inductively Coupled Plasma-Atomic Emission Spectrometry

M090305029-MB

	<u>Result</u>	<u>TrueSpikeConc.</u>	<u>RDL</u>	<u>%Recovery</u>	<u>Ctl Limits</u>
Manganese	< 0.005 mg/L		0.005		- NA

M090305029-LCS

	<u>Result</u>	<u>TrueSpikeConc.</u>	<u>%Recovery</u>	<u>Ctl Limits</u>
Manganese	0.510 mg/L	0.50	102.00	80 - 120

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CHAIN OF CUSTODY RECORD

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